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EXAMINER	
ROSARIO-VASQUEZ, DENNIS	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/981,820	ONNO, PATRICE	
	Examiner	Art Unit	
	Dennis Rosario-Vasquez	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/19/2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 02/19/02
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The US applications listed with the IDS must be updated regarding the status using PTO 1443.

Claim Objections

3. The following quotations of 37 CFR § 1.75(a) is the basis of objection:

> (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

4. Claim 5 is objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Claim 5, line 3 "the required quality level" has no antecedent basis. "the required quality level" ought to be amended to "a required quality level."

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1,2,3, 4,5,6,7,8,9,10,11, 12,13,14,15,19,20,21,22,23,24, 25,26,27,28,29, 32, 33,34,36,38 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al. (US Patent 6,711,297 B1).

Regarding claims 1 and 19, Chang et al. discloses a method and device (fig. 9,num. 1000) of processing a coded digital signal (Fig. 3, num. 130:Pyramidal Data Structure) containing on the one hand a set of samples of different types (Fig. 2A is a set of coded samples) obtained by coding a set of original samples representing physical quantities and on the other hand a set of information ("block request" is composed of 7 parameters in col. 10, lines 46-51) representing original samples and parameters used during the coding, characterized in that it includes the following steps:

a) means (Fig. 9,num. 1070:Input Control Device(s)) of determining ("User Input" of fig. 3 selects a portion of an image using one of the images of fig. 2A.) the subset of samples (Fig. 2A is a set of coded samples that correspond to the image) corresponding to a part (Fig. 2A,Level 1) of the coded digital signal (Fig. 3, num. 130:Pyramidal Data Structure generates the images of figure 2A.) using the set of information (A user sends a "block request" that is composed of 7 parameters in col. 10, lines 46-51.),

b) means (fig. 9,num. 1025 is a data bus connecting a client and server.) of obtaining ("Pixel Coordinates" of fig. 3 are obtained from a server 140 via data bus line 144.) the number of samples (The pixel coordinates correspond to an array of numbered pixels as mentioned in col. 10, lines 62-65.) of at least one predetermined type (The array of numbered pixels correspond to one block as mentioned in col. 19, lines 49-51.) and which are contained (Any of the blocks of in fig. 2A can be requested individually as mentioned in col. 10, lines 37-41.) in the given subset of samples (Fig. 2A is a set of coded samples that correspond to the image),

c) means (Fig. 9,num. 1060:Output Display allows a user to visually decide to change an image.) of deciding with regard to a modification (A user can decides to pan, zoom and select an image area as shown in fig. 3. num. 340) of the determined ("User Input" of fig. 3 selects a portion of the image using one of the images of fig. 2A.) subset of samples (Fig. 2A is a set of coded samples that correspond to the image) according (A user can request more views based on an initial view that used an array of numbered pixels.) to the number (The pixel coordinates correspond to an array of numbered pixels as mentioned in col. 10, lines 62-65.) of samples obtained ("Pixel Coordinates" of fig. 3 are obtained).

Regarding claim 2, Chang et al. discloses method according to Claim 1, characterized in that the aforementioned steps are effected on reception of a request (Fig. 3, User input is a request that corresponds to the flowchart of fig. 4, num. 410"Client Requests Initial Views) to obtain the part (Fig. 2A,Level 1) of the coded digital signal (Fig. 3, num. 130:Pyramidal Data Structure).

Regarding claim 3, Chang et al. discloses a method of processing a coded digital signal (Fig. 1, num. 130:Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64.) containing on the one hand a set of samples obtained by coding a set of original samples representing physical quantities and on the other hand a set of information concerning the size w, h of the set of original samples and its resolution res, characterized in that it includes the following steps:

a) means (Fig. 9,num. 1070:Input Control Device(s)) of locating (A cursor is used to request portions 850 of an image 820 as shown in fig. 8A, num. 830 and step 420 of fig. 4 corresponds to the cursor.) a subset of original samples (The block 700 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.) of given size zulx, zuly, zh,zw (The subset 700 is a block that has a size measured in the x and y dimensions as shown in the table of column 10.) and resolution zres (The block of figure 6B,num. 700 has a resolution of size 512 X 512) in the set (Fig. 6B has 1 large block and 8 smaller blocks.) of original samples (Fig. 6B is an image that contains an original image at different sizes as shown in figures 2B,2C,2D and 2F.) according (The dimensions of the block 700 are mapped according to the areas of figure 6B, num. 130 using the coordinate system shown in figure 2A.) to the set of information on size w (0 to 2k is the width of fig. 6B, num. 130), h (0 to 2K is the height of fig. 6B,num. 130) and resolution res (2K X 2K is the resolution of the image of fig. 6B, num. 130.) of this set (Fig. 6B,num. 130 has 1 large block and 8 smaller blocks that correspond to the set of information on size.)

b) means (Fig. 3, num. 140:Server determines the number of coefficients to send as mentioned in col. 10, lines 62-65.) of determining (fig 4, num. 460 determines the number of elements requested.), amongst the coefficients of the low-frequency sub-band LL_0 (Fig. 6A,num. 700 is a Low Low (LEVEL 2) band as shown in fig. 2E.) of the last decomposition level (Fig. 6A: Level 2 corresponds to the lowest sub-band Low Low.) obtained by decomposition (Fig. 1, num 120:Decomposition Processing) into frequency sub-bands (Fig. 2E has two frequency level bands.) of the set (Fig. 6B has 1 large block and 8 smaller blocks.) of original samples (Fig. 6B is an image that contains an original image at different sizes as shown in figures 2B,2C,2D and 2F.), the number of coefficients (Each block of fig. 6B,num. 130 has at least one coefficient for each block as mentioned in col. 10, lines 37-41.) per dimension (Each coefficient corresponds to a block that is two-dimensional.) of the signal (Fig. 1, num. 130:Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64.) which correspond (The number of coefficients are used to position the located images 700,750,770 and 760 as mentioned in col. 11, lines 45-65.) to the located (A cursor is used to request portions 850 of an image 820 as shown in fig. 8A, num. 830.) subset (Block 700 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.) ,

c) means (Fig. 9,num. 1060:Output Display allows a user to visually decide to change an image.) of deciding (Fig .8, num. 830 (numbered twice) allows a client to decide.) with regard to a modification (A user can decides to pan, zoom and select an image area as shown in fig. 8. num. 830) of the size (Each of the blocks has a size measured in the x and y dimensions as shown in the table of column 10.) of this located (A cursor is used to request portions 850 of an image 820 as shown in fig. 8A, num. 830.) subset (Block 700 figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.) according to the result of the determination step (Fig. 4, numerals 450 is a request for additional coefficients and 460 determines the numbers of coefficients based upon a user request 420.)

Regarding claim 4, Chang et al. discloses the method according to Claim 3, characterized in that the decision step (Fig .8, num. 830 (numbered twice) allows a client to decide.) takes into account at least one predetermined criterion ("7 short parameters" in col. 10, line 49-60) representing a required quality level (The 7 short parameters are used to request a new view of a desired area, zooming factor and resolution.) for the restoration (Fig. 4, num. 470 is a restoration step that uses the initial image fig. 2A.) of the subset of original samples (Fig. 2A has blocks or subsets of an original image denoted as Low Low, Low High, High Low and High High) of the digital signal (Fig. 1, num. 130:Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64 which generates the images of fig. 2A.).

Regarding claim 5, Chang et al. discloses the method according to Claim 3, characterized in that the decision step (Fig .8, num. 830 (numbered twice) allows a client to decide.) takes into account at least one predetermined criterion ("7 short parameters" in col. 10, line 49-60 requests image blocks.) representing a compromise (Requested image blocks necessary to re-construct or display the image is used and eliminates data blocks not displayed in col. 12, line 66 to col. 11, line 5. Thus, portions of the image are eliminated as a compromise for a faster display.) between [the] **a** required quality level (The 7 short parameters are used to request a new view of a desired area, zooming factor and resolution.) for the restoration (Fig. 4, num. 470 is a restoration step that uses the initial image fig. 2A.) of the subset of original samples (Fig. 2A has blocks or subsets of an original image denoted as Low Low, Low High, High Low and High High.) and the speed of processing ("just in time" data delivery is a result of the requested data necessary to re-construct the image from col. 10, line 66 to col. 11, line 5.) for restoring this subset.

Regarding claims 6 and 23, Chang et al. discloses the method according to Claims 3 and 23, characterized in that it includes a means (Fig. 4,num. 420:"User Selects New View?" is a computer program that processes requests.) and step of modifying the size (A request step is performed as shown in figure 5A which requests a 512 X 512 image from an original source image of size 2K X 2K.) of the located subset of original samples (Fig. 8A, num. 830 is a pointer that locates an area of an image 850 that corresponds to sub-images, 512 X 512 of fig. 5A,num. 500 and fig.6B, num. 700, within the larger source image, 2K X 2K, as mentioned in col. 13, lines 26-28).

Regarding claims 7 and 24, Chang et al. discloses the method according to Claims 6 and 23, characterized in that the modification means (Fig. 4,num. 420:User Selects New View?) lies in a means (Fig. 8A,num. 830 has a zoom control that corresponds to the zoom operation shown in fig. 6B: Zoom Pixel Packet.) of increasing the size (A request step increases the size of the 512 X 512 image of figure 5A shown in figure 6B as numeral 700 to a size of 1K X 1K as shown by the blocks 700,750,770 and 760 which corresponds to the Zoom Pixel Packet.) of the subset of original samples (The block 700 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.).

Regarding claim 8, Chang et al. discloses the Method according to claim 7 characterized in that, by representing, in a space of dimensions (The table in column 10 has dimensions in the x and y directions.) corresponding to the dimensions of the digital signal (The dimensions in the x and y directions correspond to blocks that are requested as shown in fig. 6B and mentioned in col. 10, lines 49-60.), on the one hand the position of the coefficients (Fig. 6B,num. 700 is a rectangle of coefficients as mentioned in col. 11 , lines 33-38.) of the low-frequency sub-band of the last decomposition level (Fig. 6B, num. 700 corresponds to the Low Low (Level 2) band as shown in figure 2E) and on the other hand the position of the subset (Fig. 6B, num. 700 is a subset with position denoted by using a coordinate system shown fig. 2A with origin (0,0).) of original samples (Fig. 6B has an original image or Source Image 2K X 2K that contains the sub-set.) delimited by a boundary (The subset 700 has a square boundary.), the increase in the size (A request step increases the size of the 512 X 512 image of figure 5A shown

in figure 6B as numeral 700 to a size of 1K X 1K as shown by the blocks 700,750,770 and 760.) of the subset (The block 700 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.) consists of moving its boundary (The boundary of figure 6B,num. 700 has a rectangular boundary that is increased in size to the boundary made by the images of numerals 700,750,770 and 760.) so as to add to this subset (Fig. 6B,num. 700) at least one coefficient (The image of fig. 6B,num. 750 shares an edge of coefficients with the image of 700) of the low-frequency sub-band (Fig. 6B. num. 700 is the low frequency sub-band.) per dimension (The image of fig. 700 ahs two dimensions.) of the digital signal (Fig. 1, num. 130:Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64.), said at least one added coefficient (The image of fig. 6B,num. 750 shares an edge of coefficients with the image of 700) being situated close (The right hand edge of fig. 6B,num. 700 shares the same edge as the left hand boundary of the image of fig. 6B, num. 750) of fig to the boundary (The boundary of figure 6B,num. 700 has a rectangular boundary that is increased in size to the boundary made by the images of numerals 700,750,770 and 760.) before the movement thereof (The boundary of fig. 6B, num. 700 originally had a small boundary , once a change in boundaries occurred the coefficients on the left hand side of fig. 750,which are the same coefficients as the coefficients of 700, changes the boundary of the image of 700 to eventually generate a larger image,700,750,770 and 760, using the other images 770 and 760.)

Regarding claims 9 and 25, Chang et al. discloses the method according to claims 6 and 20, characterized in that the modification means (A request step of fig. 5A:Request (512 X 512 Source Image) lies in a means (Fig. 8A,num. 830 has a zoom control) of reduction in the size (A user can request an image block 700 to be reduced in size as shown in figure 2H to a size of 128 X 256.) of the subset (The block 700 of figure 6B,num. 130 and also shown in fig. 2H that has a an image block of size 512 X 512 is a subset of original samples that correspond to the cursor to request an image portion.).

Claim 10 is similar to claim 8, except for requiring an opposite operation of claim 9 which Chang et al. uses a zoom factor to zoom in or out.

Regarding claim 11, Chang et al. discloses the method according to Claim 3, characterized in that the decision step (Fig .8, num. 830 (numbered twice) allows a client to decide.) results in a preservation (Fig. 4, step 420 has a "No" loop that preserves the size of the subset of images 700,750,770 and 760 of fig. 6B and does not change the size of the images of 700,750,770 and 760 until "Yes" is selected.) of the size of the located (A cursor is used to request portions 850 of an image 820 as shown in fig. 8A, num. 830 and step 420 of fig. 4 corresponds to the cursor.) subset of original samples (The blocks 700,750,770,760 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.).

Regarding claim 12, Chang et al. discloses the method according to Claim 3, characterized in that it also includes a step (Fig 6B, Zoom Pixel Packet 3 X 256 X 256) and means (Fig. 8A,num. 830 has a zoom control.) of increasing the size (The image of fig. 6B, num. 700 is increased in size using the zoom control from a block 700 to an image with blocks 700,750,770 and 760.) of the located subset of original samples (The blocks 700,750,770,760 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.) which does not change the number of coefficients (The subset of samples 700,750,760 and 700 of fig. 6B increases the size of image 700 with respective coefficients that are added to number of coefficients of the image 700 as mentioned in col. 11, lines 59-65. Therefore the coefficients of image 700 have additional coefficients that are added to created a larger image.) of the low-frequency sub-band (Fig. 6A,num. 700 is a Low Low (LEVEL 2) band as shown in fig. 2E.) corresponding (The image of fig. 6A, num. 700 is a smaller version of the image of numerals 700,750,760 and 770.) to said subset (The blocks 700,750,770,760 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.).

Claim 13 has been addressed in claim 8.

Regarding claim 14,Chang et al. discloses the method according to Claim 3, characterized in that the set of original samples (Fig. 6B has 1 large block and 8 smaller blocks.) of the digital signal (Fig. 1, num. 130:Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64.) is separated into several zones T_1, ...,T_{15} (Fig. 6B has 9 zones), which have each independently undergone a decomposition (Fig. 1, num.120:Decomposition Processing generates the zones of fig. 6B.) into frequency sub-bands (Low Low,Low High,High Low and High High as shown in fig, 2A which corresponds to the zones of fig. 6B.) according to at least one decomposition level (Fig. 2A has a level 1) and the determination step consists of determining (fig 4, num. 460 determines the number of elements requested.), for each zone (Fig. 6B has 9 zones), amongst the coefficients of the low-frequency sub-band (Fig. 6B, num. 700 is a rectangle of coefficients.) of the last decomposition level (Fig. 6B,num. 700 corresponds to level 2 as shown in a corresponding figure 2E.) obtained by decomposition(Fig. 1, num.120:Decomposition Processing generates the zones of fig. 6B.) into frequency sub-bands (Fig. 2E, Low Low, Low High, High Low and High High) of the zone in question (A square made of numerals 700,750,770,760 is a zone that is requested.), the number of coefficients(A number of coefficients from numerals 750,770 and 760 are determined for transmission to client 150 based upon the request.) of this sub-band (Fig. 6B, num. 700 is the Low Low sub-band) per dimension (Fig. 6B,num. 700 is processed in a dimension as shown in the table in column 10.) of the signal (Fig. 1, num. 130: Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64) which correspond to the located (A cursor is used to request portions 850 of an image 820 as

shown in fig. 8A, num. 830 and step 420 of fig. 4 corresponds to the cursor.) subset (The block 700 of figure 6B,num. 130 is a subset of original samples that correspond to the cursor to request an image portion.).

Regarding claim 15, Chang et al. discloses the method according to Claim 3, characterized in that the coded digital signal includes blocks of samples which have been coded independently (Change et al. states, "The wavelet transform function embodiment [fig. 5A,num. 130] generates...independent information among the levels of the hierarchical representation (col. 6, lines 33-35).").

Claim 21 was addressed in claim 4.

Claim 22 was addressed in claim 5.

Claim 26 was addressed in claim 11.

Claim 28 was addressed in claim 14.

Claim 29 was addressed in claim 15.

Claim 32 was addressed in claim 18.

Regarding claims 33 and 34, Chang et al. discloses the device according to claims 19 and 20, characterized in that the determination, obtaining and decision means are incorporated in:

a) a microprocessor (fig.9,num. 1005),

b) a read only memory (Fig. 9,num. 1040 inputs and outputs coded data in col. 15, lines 19-23.) containing a program for processing the coded digital signal, and

c) a random access memory (Fig. 9,num. 1010) containing registers("banks" of ram in col. 14, line 64.) adapted to record variables modified during the execution of said program.

Regarding claim 36,Chang et al discloses a means (fig. 9, num. 1010 stores instructions in col. 14, line 59.) of storing information which can be read by a computer or a microprocessor (Fig. 9,num. 1005) storing instructions of a computer program making it possible to implement the processing method according to claim 3.

Regarding claim 38, Chang et al. discloses an information storage means(Fig. 9,num. 1040 is a portable storage.) which is removable, partially or totally, and which can be read by a computer or microprocessor(fig. 9,num. 1010) storing instructions of a computer program making possible to implement the processing method according to claim 3.

Regarding claim 40, Chang et al. discloses a computer program ("software" in col. 14, line 62) which can be directly loaded into a programmable device (fig. 9,num. 1010), containing instructions or portions of code for implementing the steps of the processing method according to claim 3, when said computer program is executed on a programmable device.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 16,17,18,30,31,35,37,39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent 6,711,297 B1) in view of Chui et al. (US Patent 6,041,143 A).

Claims 16 and 30 have been addressed in claim 3 except for the limitation of the decoding method including the following steps of extracting to restoration. Chang et al. does not teach the above limitation, but does suggest decoding using fig. 3, num. 144 as mentioned in col. 10, lines 41-45.

However, Chui et al. teaches a method of decoding as suggested by Chang et al. of a decoding method including the following steps:

a) means of extracting the samples (Extraction of mid-resolution image samples are performed on coded data shown as blocks in figure 4. num. 150.) from the coded digital signal (fig. 3, num. 136:Encoder generates the coded data of fig. 4, num. 150.) corresponding to the located subset (LL of fig. 4 is the subset that corresponds to mid-resolution image data.) of original samples ("initial image" in fig. 4, num. 150 contains a plurality of samples.) whose size has possibly been modified (If the initial image falls on a border of any of the borders shown in figure 4, then the initial image is divided into four regions as mentioned from col. 5, line 61 to col. 6, line 4.),

b) means of entropic decoding (fig. 3, num. 138:Decoder) of these samples ("initial image" in fig. 4, num. 150 contains a plurality of samples.),

c) means of dequantisation (fig. 3, num. 140:De-Quantization Proc.) of the previously decoded samples (Decoding is performed first as shown by the ordering in figure 3.),

d) means of reverse transformation (Fig. 3, num. 132 performs a reverse transform after de-quantization processing as mentioned in col. 9, lines 1-7.) of the decomposition ("regenerated" array corresponds to the images of fig. 4.) into frequency sub-bands(Fig. 4 has a HH and HL frequency sub-bands) on the previously dequantised samples,

e) means of restoration (Fig. 3, num. 126:Reconstructed Image Data) of the selected subset of samples (The extracted mid-resolution image data is reconstructed.).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Chang et al.'s teaching of a decoding method with Chui et al.'s decoding method, because Chui et al.'s decoding method reconstructs images that "can be used for many purposes, including displaying on a variety of display devices, printing (col. 2, lines 31-35)."

Claim 17 has been addressed in claim 16.

Regarding claim 18, the combination teaches the method according to Claim 16, characterized in that the digital signal (Chang et al., fig. 1, num. 130:Pyramidal Data Structure is sub-band coding as mentioned in col. 8, lines 56-64.) is an image signal, the samples of the image being arranged to constitute the rows and columns of this

image (Fig. 2A shows an image with 2 rows and 2 columns of an image as mentioned in col. 8, lines 36-38. Note that fig. 2d was generated using figure 2a, thus figure 2a has rows and columns.).

Claim 31 was addressed in claim 17.

Claim 35 was addressed in claim 33.

Claim 37 was addressed in claim 36.

Claim 39 was addressed in claim 38.

Claim 41 was addressed in claim 40.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cass et al. (US Patent 6,141,441 A) is pertinent as teaching a method of selecting an image portion 805 in figs. 44 and 45.

DeAguiar et al. (US Patent Re. 36,145) is pertinent as teaching a method of selecting an image portion 102 that is not exactly aligned with a grid 110a as shown in fig. 1.

Barnsley et al. (US Patent 5,347,600 A) is pertinent as teaching a method of dividing an image and shrinking each divided image as shown in fig. 4.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario-Vasquez whose telephone number is 703-305-5431. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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